

Anti-Hsp70 (MOUSE) Monoclonal Antibody - 200-301-A27

Code: 200-301-A27

Size: 100 µg

Product Description: Anti-Hsp70 (MOUSE) Monoclonal Antibody - 200-301-A27

Concentration: 1.0 mg/ml by UV absorbance at 280 nm

PhysicalState: Liquid (sterile filtered)

Label	Unconjugated
Host	Mouse
Gene Name	HSPA1A
Species Reactivity	human, bovine, mouse, rat, C.elegans, dog, chicken, Drosophila, carp, guinea pig, hamster, monkey, pig, rabbit, sheep
Buffer	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Stabilizer	50% (v/v) Glycerol
Preservative	0.1% (w/v) Sodium Azide
Storage Condition	Hsp70 antibody is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing.
Synonyms	Heat shock 70 kDa protein 1 antibody, heat shock 70kDa protein 1A antibody, Heat shock 70kDa protein 1B antibody, Heat shock induced protein antibody, heat shock protein 70 antibody, HSP70 1 antibody
Application Note	This Protein G purified antibody has been tested for use in ELISA, immunofluorescence microscopy, western blotting, FACS, immunoelectron microscopy, immunohistochemistry and immunoprecipitation. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 70 kDa in size corresponding to Hsp70 by western blotting in the appropriate cell lysate or extract. In general, a 1:1,000 dilution is suggested for most applications and is suitable to detect Hsp70 in 20 µg of heat shocked HeLa cell lysate by western blotting.
Background	Anti-Hsp 70 antibody is routinely used in cancer and signal transduction research. Hsp70 genes encode abundant heat-inducible 70-kDa hsps (hsp70s). In most eukaryotes, hsp70 genes exist as part of a multigene family. Hsp70s are found in most cellular compartments of eukaryotes, including nuclei, mitochondria, chloroplasts, the endoplasmic reticulum and the cytosol, as well as in bacteria. The genes show a high degree of conservation, having at least 50% identity (2). The N-terminal two-thirds of hsp70s are more conserved than the C-terminal one-third. Hsp70 binds ATP with high affinity and possesses a weak ATPase activity which can be stimulated by binding to unfolded proteins and synthetic peptides (3). When hsc70 (constitutively expressed) present in mammalian cells was truncated, ATP binding activity was found to reside in an N-terminal fragment of 44 kDa which lacked peptide binding capacity. Polypeptide binding ability therefore resided within the C-terminal half (4). The structure of this ATP binding domain displays multiple features of nucleotide binding proteins (5). All hsp70s, regardless of location, bind proteins, particularly unfolded ones. The molecular chaperones of the hsp70 family recognize and bind to nascent polypeptide chains as well as partially folded intermediates of proteins, preventing their aggregation and misfolding. The binding of ATP triggers a critical conformational change leading to the release of the bound substrate protein (6). The universal ability of hsp70s to undergo cycles of binding to and release from hydrophobic stretches of partially unfolded proteins determines their role in a great variety of vital intracellular functions such as protein synthesis, protein folding and oligomerization, and protein transport.
Purity And Specificity	This Protein G purified monoclonal antibody reacts with human and mouse Hsp70 protein. A BLAST analysis was used to suggest cross-reactivity with Hsp70 from human, bovine, mouse, rat, C.elegans, dog, chicken, Drosophila, carp, guinea pig, hamster, monkey, pig, rabbit and sheep sources based on 100% homology with the immunizing sequence. No cross-reactivity occurs with hsc70 (hsp73). Cross-reactivity with Hsp70 from other sources has not been determined.
Assay Dilutions	User Optimized
Immunohistochemistry	10 µg/ml
WESTERN BLOT	1:500-1:2000
IHC	10 µg/ml
IFMICROSCOPY	1:200-1:1000
OTHER ASSAYS	User Optimized
Expiration	Expiration date is one (1) year from date of opening.
Immunogen	Hsp70 monoclonal antibody was prepared using conventional hybridoma technology after repeated

immunizations with a synthetic peptide from the region of amino acid residues 436-503 of human Hsp70 protein.

General Reference

Welch, W.J. and Suhan, J.P. (1986) J.Cell Biol. 103: 2035-2050.

Boorstein, W.R., Ziegelhoffer, T. and Craig, E.A. (1993) J. Mol. Evol. 38 (1): 1-17.

Rothman, J. (1989) Cell 59: 591-601.

Related Products

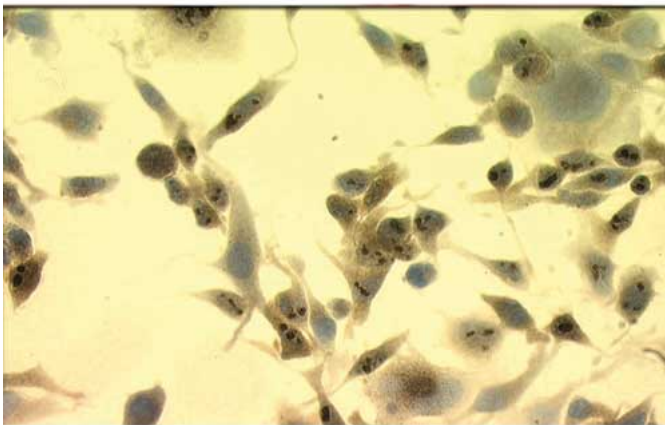
200-301-243	Anti-HSP27 (MOUSE) Monoclonal Antibody - 200-301-243
200-301-268	Anti-AKT pS473 (MOUSE) Monoclonal Antibody - 200-301-268
200-301-A28	Anti-Hsc70 (Hsp73) (MOUSE) Monoclonal Antibody - 200-301-A28
600-401-929	Anti-Heat shock protein HSP 90-alpha (RABBIT) Antibody - 600-401-929

Related Links

NCBI	http://www.ncbi.nlm.nih.gov/protein/167466173
UniProtKB	http://www.uniprot.org/uniprot/P08107
NCBI - 167466173	http://www.ncbi.nlm.nih.gov/protein/167466173
UniProt - P08107	http://www.uniprot.org/uniprot/P08107
Gene ID - 3304	http://www.ncbi.nlm.nih.gov/gene/3304

Images

- 1 Immunohistochemistry of Mouse anti-Hsp70 monoclonal antibody. Tissue: Heat-shocked mouse melanoma. Fixation: formalin fixed paraffin embedded. Antigen retrieval: not required. Primary antibody: Hsp70 monoclonal antibody at 10 µg/mL for 1 h at RT. Secondary antibody: Peroxidase mouse secondary antibody at 1:10,000 for 45 min at RT. Staining: Hsp70 monoclonal as precipitated red signal with hematoxylin purple nuclear counterstain.



- 2 Western blot using Rockland's Protein G purified anti-Hsp70 antibody shows detection of Hsp70 in whole cell lysates from heat shocked HeLa cells. The band marked by the arrowhead corresponds to Hsp70 at an approximate molecular weight of 70 kDa. The primary antibody was used at a 1:1000 dilution.



Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.